THE UNITED STATES BUYS A CANAL

With the growth of industry and world trade, and the increasing size and speed of vessels, the shipping interests of Baltimore realized ever more urgently the need for a nore direct ship route to the sea. Other interests were involved but pressure was exerted mainly from the Chesapeake side of the Delmarva Peninsula. In 1871 the National Commercial Convention in session in Baltimore resolved:

> *"That Congress be memorialized to direct a survey to be made between the Chesapeake and Delaware Bays for proposed improvement, and, if found to be practicable, desirable, and valuable to the great interest of the country, that the said ship canal be constructed."*

In March 1872 action was taken in the House of Representatives to obtain feasibility reports and that same year the Maryland and Delaware Ship Canal Co. was incorporated. During the next six years a number of reports were prepared by such eminent engineers as Benjamin H. Latrobe and W. Cullen Brown.

Finally, directions for the surveys of a ship canal route were contained in the River and Harbor Bill for 1878 and surveys were undertaken by the Engineer Office in Baltimore under the direction of Maj. Wm. P. Craighill. The report of Mr. N. H. Hutton, Assistant Engineer, dated Sept. 20, 1879 was the first to bring in an unbiased, comprehensive appraisal of all the routes then under popular consideration. Moreover it weighed factors which would be requisite for consideration of a National Defense Route, an aspect of the project which seemed less than vital to the commercial interests. The *debouche* of a ship canal into Lower Delaware Bay presented problems of fortification both difficult and expensive:

> *"The shore from Cape Henlopen to Liston's Point presents an almost unbroken marsh, several miles in width, much of it overflowed at high water, and none of it more than four feet above low water,"*

complicating the prospects for establishing adequate foundations for mechanical structures.

The sum of $10,000, "or so much thereof as may be necessary"[1] was appropriated in 1882 to complete surveys. By the following year, this work was substantially finished. The River and Harbor Act of August 1894 authorized the President of the United States to appoint a board of officers and civilians to examine and determine the most feasible route for construction of a canal between the Chesapeake and Delaware Bays "which shall give the greatest facility to commerce and will be best adapted for National Defense." This appraisal was to be based on surveys previously made under the direction of the War Department, the results of which were contained in annual reports of the Chief of Engineers for the years 1879, 1880, 1882, and 1883.

Board members were: Brig. Gen. Thomas Lincoln Casey, Chief of Engineers, Chairman; E.P. Alexander of South Carolina; Mendes Cohen of Maryland; Capt. George Dewey, U.S. Navy; Col. William P. Craighill, Corps of Engineers and Capt. John G. D. Knight, Corps of Engineers, Secretary.

The surveys under appraisal were detailed,

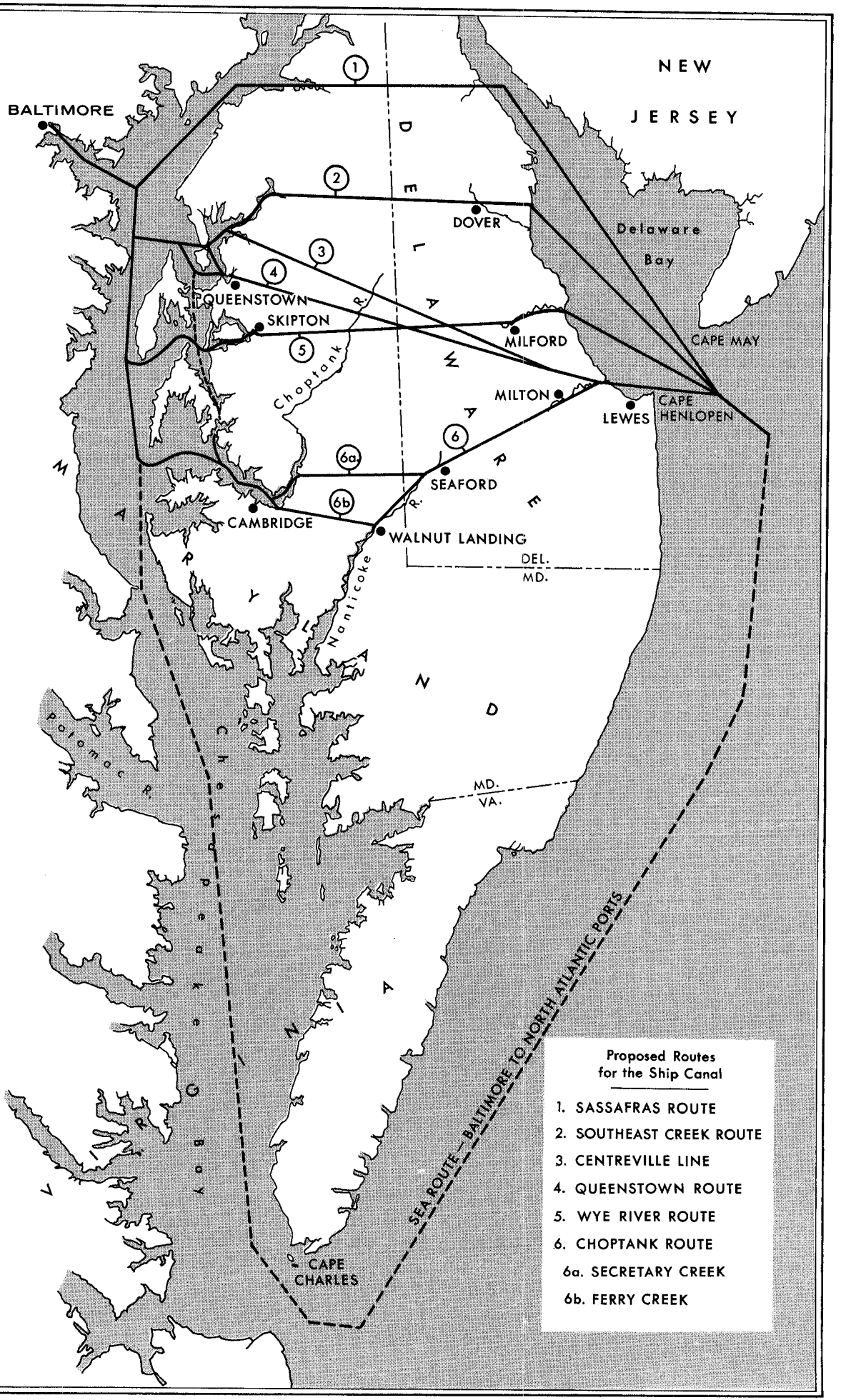
The merchants of Baltimore requested the Congress in 1871 to direct studies for a ship channel across the Delmarva Peninsula. Ensuing in depth surveys of six routes and the existing shallow Chesapeake and Delaware Canal found only the latter eligible for development by the National Government. By 1894, studies were considering the proposed channel as a link in an inland coastal waterway, generally beneficial to East Coast shippers, but of little specific interest to the Port of Baltimore.

comprehensive studies covering seven possible routes. Of these, the most northerly was the Back Creek route, substantially the route of the existing Chesapeake and Delaware Canal. The Sassafras Route proposed to cross the peninsula ten miles farther south and was sponsored by the Baltimore-based Maryland and Delaware Ship Canal Co. Farther south ran the proposed Southeast Creek, Centreville Line, Queenstown, Wye River and Choptank Routes.

The original studies proposed the use of tide locks at either terminus of the ship canal. For the purpose of computing savings in time, miles and cost, a point at sea was arbitrarily established twelve miles beyond the Delaware breakwater. In 1883 highway traffic was viewed in terms of horse-drawn vehicles; the load factors for bridges were calculated accordingly. The 1894 board found some of the old criteria obsolete and many of the cost estimates unrealistic, due in part to technological advances made in the elapsed decade. Reaction to the proposed ship canal was widely expressed throughout the two-bay area.

Lengthy studies of tide patterns and icing characteristics in the bays eventually led to the opinion that entrance locks would be unnecessary. Variables in planned channel dimensions ranged from 21 to 27 feet for depth, from 40 to 100 feet for bottom width. These dimensions were deemed adequate to accomodate the largest vessels then afloat. A general polarizing of preference for the more northerly routes began to emerge. The long lines of the southern routes would require huge sums for construction and maintenance. The slow speeds of canal navigation (4 MPH) over the long routes (Queenstown, 54 miles) offset the benefits of directness and saved mileage. Most of the objections were cogently stated in a report by the Committee on River and Harbor Approaches of the Baltimore Board of Trade, presented and read at a special meeting on 22 June 1894. The committee found that "such a ship canal will be of no practical use or benefit to the foreign commerce of this port". They cited increased dangers of navigation, groundings, collisions, etc. which were more frequent in narrow and shallow waters, hazards of canal transit at night, and probable increase of insurance costs. Almost as a footnote, the report endorsed construction of a canal "*deeper and wider than the one which now connects the Delaware and Chesapeake Bays,....capable of passing barges and light weight steamers.... provided it is constructed by the United States Government...and made absolutely free.*"

Consideration of the second part of the dual-purpose concept, adaptation for the national defense, also urged renewed assessment of the northern routes: the old Chespeake and Delaware Lock Canal (Back Creek route) and the Maryland and Delaware Ship Canal Company's proposed Sassafras route. A presumed military function of the proposed ship canal was to provide an escape route for a fleet bottled up in Delaware Bay. It was suggested, too, that submarines would have greater tactical maneuverability if given access to the top of both bays. In those pre-aircraft days, when tactical concepts were based almost entirely on horizontal mobility, the static armored fortress still had great defensive potential. Two such installations already


NEW
JERSEY
BALTIMORE
DELAWARE
DOVER
Delaware
Bay
QUEENSTOWN
SKIPTON
MILFORD
CAPE MAY
Choptank R.
MILTON
LEWES
CAPE
HENLOPEN
SEAFORD
CAMBRIDGE
WALNUT LANDING
DEL.
MD.
MARYLAND
Nanticoke R.
Potomac R.
Chesapeake Bay
MD.
VA.
VIRGINIA
CAPE
CHARLES
SEA ROUTE — BALTIMORE TO NORTH ATLANTIC PORTS
Proposed Routes
for the Ship Canal
1. SASSAFRAS ROUTE
2. SOUTHEAST CREEK ROUTE
3. CENTREVILLE LINE
4. QUEENSTOWN ROUTE
5. WYE RIVER ROUTE
6. CHOPTANK ROUTE
6a. SECRETARY CREEK
6b. FERRY CREEK

existed at the northern end of the bay: Fort Delaware on Pea Patch Island opposite Delaware City and Fort DuPont, on the west bank of the Delaware River just south of Delaware City. From the batteries of these two forts a crossfire could be trained on any hostile vessel which might approach the eastern terminus of the canal.

The enthusiasm of the Baltimoreans in 1871, enough to generate a decade of federal activity in behalf of the much-desired ship canal, had degenerated into indifference and outright opposition. The view that the canal would not be used by ocean-going ships was aired repeatedly in 1882-83 by the mercantile and shipping interests of Baltimore and must have contributed to the eventual discarding of all but the two northern routes. The opinion in other areas including the Government, was that a toll-free ship canal across the peninsula would unquestionably be of great convenience to foreign shipping as well as to coastwise trade, and that objections notwithstanding, once the channel was cut the ships would always take the shortest course. This theory was subsequently vindicated by annual tonnage records.

The special board of 1894 concluded in favor of the Back Creek route as the most feasible for national defense and of greatest facility to commerce. Factors favoring it over all others were:

1. Minimum total length (about 14 miles); minimum restricted canal way.
2. Least number of bridges required.
3. Already existing military defenses.
4. Opportunity to reimburse owners and stockholders.
5. Property in which the government already had equity.
6. Least expensive to acquire, reconstruct and maintain.

A new board was appointed by the President in June 1906 to examine and appraise the value of the existing Chesapeake and Delaware Canal and to examine and investigate the feasibility of the Sassafras route. This panel, referred to as the "Agnus Commission," was chaired by then-retired General Felix Agnus of Baltimore. General Agnus was among the first and most articulate of the ship canal's proponents. On the board with him were Major C. A. F. Flagler, Corps of Engineers and F. T. Chambers, Civil Engineer, U. S. Navy.

Within six months the Agnus Commission had gathered the data for its report, containing re-evaluations of precedent reports, evaluations of new hearings and a detailed appraisal of the works and franchises of the Chesapeake and Delaware Canal Company's holdings. Of singular interest was Capt. Philip Reybold's rather impassioned deposition, given before the commission at Wilmington, setting forth the military advantages to be realized by developing the existing route. The Sassafras route was examined with equal thoroughness but was judged, finally, to lack first choice advantages. The commission recommended purchase of the old canal at a price not to exceed $2,514,289.70. The Canal Company's total valuation was $5,348,071.00. Capital stock of the C&D Canal owned by the state of Maryland in the amount of $81,250 was offered to the project "if the United States Government will purchase said canal and construct over the route of the same a free and open waterway, having a depth and

capacity sufficient to accomodate the largest vessel afloat at mean low water."[2]

Efforts to get the canal company into a negotiating position continued to be ineffective. Stockholders, in 1906, numbered 340, bondholders 531 and the states of Maryland, Delaware and Pennsylvania owned large blocks of stock, which they carried on their books as nonproductive assets. A dividend on the stock had not been paid since 1877. Company officials expressed willingness to sell the property but found it impossible to get a consensus of the stockholders.

A broader concept of the benefits of a ship canal connecting Delaware and Chesapeake Bays came to maturity in the next two years. The original impetus provided by the mercantile and shipping interests of Baltimore was directed toward one specific solution: A protected route, direct as possible, for ocean-going ships between Baltimore port and the sea. There is little doubt that those interests would have been happily served by a free and open waterway developed and maintained by the Federal Government over a route of their choosing. Such unilateral benefits were never regarded by the study commissions as adequate to justify a federal project and erosion of Baltimore's support increased as the broader concept evolved. The River and Harbor Act of March 3, 1909 touched off the final phase of the ship canal search. That act directed surveys for a waterway, inland where practicable, from Boston, Massachusetts to Beaufort Inlet, North Carolina". . . . *as may be found sufficient for commercial, naval or military purposes . . . . . and a report upon the desirability of utilizing as a part of such waterway any existing public or private canal, or any part thereof . . .* " As a link in a network of protected intracoastal navigation channels, the old C&D Canal was ideally situated. A special board of Corps of Engineers officers[3] found this to be so and on Dec. 13, 1911 the Board of Engineers for Rivers and Harbors (senior member, Col. Wm. T. Rossell, Corps of Engineers) concurred, recommending immediate purchase of the canal, by condemnation if necessary.

Final reports, dealing with specific changes to be made in transforming the Old Lock Canal to its new function, were made by the special board, the Board for Rivers and Harbors, and lastly, in August 1913, by Brig. Gen. W. H. Bixby, Chief of Engineers. A memorandum for the Chief of Staff, War Department under the subject "Military Advantages of the Chesapeake and Delaware Canal" presented a 7-paragraph summation of the military significance attributed to that waterway in 1914. This document was signed by Brig. Gen. M. M. Macomb, Chief of the War College and bore the concurrence of Brig. Gen. Tasker H. Bliss, Acting Chief of Staff and Lindley M. Garrison, Secretary of War.

In December 1918, 33 days after the signing of the Armistice which ended World War I, Newton D. Baker, Secretary of War dispatched a message to the 65th Congress, recommending the purchase and improvement of the Chesapeake and Delaware Canal as part of the Inland Waterway. A bill was passed, funds appropriated and the purchase transacted.[4] Thus, 48 years after the kick-off resolution in Baltimore, the ship canal was authorized and the task of its construction and maintenance was assumed, and not since relinquished, by the Corps of Engineers.